Winter 2016/2017

RECLAMATION
Managing Water in the West

Safety Matters

Pacific Northwest Region — Amazing People Accomplishing Important Work

INSIDE

Safety Matters

Winter 2016/2017

Safety Matters is published annually by the Reclamation's PN Regional Public Affairs Office.

We want to hear from you. Please contact us at mcoffey@usbr.gov.

Writers: Kelly Bridges, Kayla Griffin, Erika Lopez, Dennis Hostetter, Suzanne Marinelli, Megan McKay, Dennis Philmon, Annette Ross, Kirsten Strough, Dave Walsh, Kathrine Woodworth

Photographers: Dale Henriksen, Kirsten Strough, Dave Walsh

Contributing Editors: Boris Belchoff, Wes Johnson, Shawn Smith, Joe Summers, Dawn Wiedemeir, Ryan Newman

Graphic Designer: Bobby Gaytan

Cover photo: Staff at the Snake River Area Office use Satellite Emergency Notification Devices to keep track of their crews in remote areas. (Photo by Kirsten Strough)

Message from the Regional Director

I'm excited to share with you our next issue of *Safety Matters* magazine. Inside, you'll find numerous stories about regional employees who embrace a can-do safety attitude every day. They lead through action because safety is part of their everyday values.

Whether you're new to Reclamation or a seasoned employee, you should know our top priority is safety—and your safety *does* matter. Safety will always be our first Core Value and an essential way in which we do business in this region.

Our goal is to maintain a safety culture that invokes open dialogue, personal responsibility, and situational awareness. In fact, you'll note that situational awareness is a common theme to many of the stories featured in this issue of *Safety Matters*.

Looking back on 2016, the Regional Safety Office has introduced some new ways to communicate safety.

Beginning last spring, the first Safety Alert System message was issued. This responsive tool was developed because employees wanted timely and unfiltered information about an incident or practice. The alerts, yellow or red, keep employees tuned in and build on situational awareness by noting incident severity and complexity. As a promise from the Board of Directors, alerts will be issued promptly and as often as the need arises.

The Spillway Newsletter launched in July with news on safety trends, profiles, and tips each month. I am proud to see this publication being utilized as another way to keep safety on everyone's mind.

Another important tool we are using to grow our safety culture and to communicate is the Safety Board of Directors meeting. The board comprises front office and regional leadership. They meet monthly to review safety trends, develop policy, and share insights about safety in our Region.

Finally, I'd like to recognize the hard work of our safety committees at the Field, Area, and Regional Offices. These committees meet regularly to address local staff concerns, implement positive changes, and transfer safety knowledge from the committees to employees.

So, from Hungry Horse Dam to Grand Coulee to Umatilla Field Office and on to Palisades, please help us build a safety culture of which we can be proud.

Thank you!

I Care About SAFETY

Active Shooter Response

If an active shooter is in your vicinity, be prepared and be aware. Understand your options: Run, Hide, or Fight.

Contact Emergency Management Specialist Greg Bradley for information on active shooter training for your workplace.
gbradley@usbr.gov or 208-378-5207

Teton Dam: 40 Years Later

"It was just totally still in the cabin of that plane because all of us knew that the dam had failed. We took a couple of turns over the dam, and sure enough it had breached, and water was cascading through. It was a mess downstream."

- Brent Carter, retired Regional Geologist

A Dam Failure Rebuilds an Agency and Spawns Dam Safety

By Kelly Bridges

More than 40 years ago, Reclamation's reputation and historic legacy were dramatically altered with the failure of Teton Dam in southeastern Idaho. On June 5, 1976, bulldozer operators tried in vain to plug seepage holes on the downstream face of the dam. By 11 a.m., a torrent of water ripped through the dam, coursing out of control at more than one million cubic feet per second.

Hit hardest by the raging floodwaters were residents of downstream communities like Sugar City, Rexburg, and Wilford. Their property was battered by the rising waters and flood debris as trees, houses, cattle, and cars were washed away. The disaster resulted in the loss of 11 lives and millions of dollars in property damage.

To honor the 40th Anniversary of this tragic event and to reinforce the importance of dam safety, over 200 employees came together last June to hear from witnesses to the event. Retired Regional Geologist Brent Carter, retired Regional Safety of Dams Manager Jim Mumford, and retired Deputy Regional Director Terry Kent gave voice to a critical time that shattered the agencies legacy and forced Reclamation to rebuild the organization and embrace dam safety.

Carter provided a technical overview of the failure, recalling the helplessness he felt while watching from high above as the dam collapsed. He was flying to a meeting to discuss issues with the dam when the failure occurred.

"It was just totally still in the cabin of that plane because all of us knew that the dam had failed. We took a couple of turns over the dam, and sure enough it had breached, and water was cascading through. It was a mess downstream," said Carter.

Mumford focused on the change in Reclamation's culture and how the event became a catalyst for

The Teton Dam disaster resulted in the loss of 11 lives and millions of dollars in property damage. (Photo by Glade Walker)

creation of the Dam Safety program—now a model for dam safety all over the world.

The goal of the Dam Safety program is long-term stability of dams to protect lives and property, and to ensure the physical integrity of Reclamation dams. The program is recognized worldwide as the standard for Dam Safety and Risk Management. Our commitment to dam safety extends from the Commissioner in Washington, D.C., to the field staff at every Reclamation dam. Reclamation engineers assess all of Reclamation's dams under strict criteria established under the program. Each structure is periodically reviewed for stability under seismic and hydrologic loading and for indications of internal erosion and physical deterioration.

More about the Dam Safety Program

- The Safety of Dams Act became public law Nov. 2, 1978. "An act to authorize the Secretary of the Interior to construct, restore, operate, and maintain new or modified features at existing federal Reclamation dams for Safety of Dams purposes."
- Under the Safety of Dams program, Reclamation completes studies to identify and accomplish needed corrective action on Reclamation dams. The selected course of action relies on assessments of risks and liabilities, with environmental considerations and public involvement informing the decision-making process.
- Comprehensive Reviews (CR) are performed every eight years. Focus areas include changes in modern construction methods, loading conditions on the dam, downstream population, and an evaluation of risks.
- Periodic Facility Reviews (PFR) are conducted every eight years and alternate with the CRs on a four-year cycle. The PFR involves a detailed on-site examination of structures.
- Annual site inspections are conducted during years when there are no CRs or PFRs.
- Emergency Action Plans are updated annually and tabletop and functional exercises are performed for every four years on an alternating schedule. Tabletop exercises are an information discussion of actions to be taken in case of an emergency, and functional exercises are action-based exercises where players perform or simulate their response to a given scenario.
- Learn more at: www.usbr.gov/ssle/damsafety

Background photo: Teton Dam Failure June 5, 1976

"Our concern was not just a potential headworks gate collapse but potential damage to the other newly installed gates at Minidoka."

– Ryan Newman, Upper Snake Field Office manager

Minidoka Dam crews install bulkheads on the South Side Canal head gates last winter. (Photo by Dave Walsh)

Buckled Gate Ignites Response

By Megan McKay

Minidoka Dam maintenance mechanic Ed Ryan was fighting off gusts of wind and bitter cold while conducting a routine inspection of the dam last February. He spied a buckled arm on one of two newly installed radial gates at the South Side Canal headworks. The damage alarmed him.

With the reservoir one foot from full, Ryan's swift reporting of the damage triggered a rapid response by Reclamation and irrigation district staff. Their work prevented a potential collapsed radial gate and flooding downstream.

The main culprit was thick, ice cover over Lake Walcott that exerted immense pressure on the gates. The damaged gate was one of four that control water releases into irrigation canals on the North and South sides of the dam.

"Our concern was not just a potential headworks gate collapse but potential damage to the other newly installed gates at Minidoka," said Ryan Newman, Upper Snake Field Office (USFO) Manager. Though the larger, beefier spillway gates had been in place over a year ago, they were manufactured by the same vendor.

Minidoka facility staff, with support from USFO, the Regional Office, and Denver Technical Service Center, immediately responded, recognizing the potential risk to downstream property owners should the gate give away under extreme ice-loading conditions.

The estimated canal capacity downstream from the gate was 1,300 cfs; had the buckled gate failed, three times that amount would have been released into the canal. This would have severely damaged the canal, and the surge of water would have flowed through populated farmland for several miles before running back into the Snake River.

In response, 24-hour site monitoring was initiated, and a bubbler system was installed to agitate water around the gates and relieve potential ice loading. Large bulkheads were placed upstream and downstream of the compromised gate. Also, the 12 larger gates on the main spillway were closely inspected.

In the weeks following the incident, the damaged radial gate arm was removed, and a new section was installed. All gate arms at the headworks were reinforced with welded plates. The monthly inspection protocol was updated and resumed. By spring, the 12 spillway gates were thoroughly inspected, and welds were examined for cracks or imperfections.

Because it was found that the arms of the failed gate were sized smaller than specified, this incident has led to a Reclamation-wide review of design criteria for ice loading.

Ultimately, the gate buckling incident left no doubt that cool heads, frequent communication, and decisive action led to successful handling of this potential gate failure.

Breakers Bad – Sparks Safety Alert for Potential Breaker Failure

By Dave Walsh

Just before irrigation season began last spring, engineers from the Technical Service Center, Regional Office, and Yakima Field Office conducted tests on three main bus breakers supplying power to the Umatilla Project's Columbia River Pumping Plant (CRPP) in Hermiston, Oregon. It had been more than 15 years since the breakers were last tested.

Plans to upgrade the CRPP's Motor Control Cabinet (MCC) which houses the breakers required testing before proceeding. The MCC runs five of the six big pumps that draw water from the Columbia River for use on the Umatilla Project.

Tests quickly revealed all three breakers failed to perform within manufacturing specifications.

"The tests showed they were not fully closing on the first try. Anyone starting a pump downstream of the breaker could have created a potentially deadly arc flash," said Boris Belchoff Umatilla Field Office manager.

Arc flashes are a dangerous condition associated with the release of energy caused by an electrical arc that travels through the air from one conductor to another, or to ground. The resulting intense heat and spontaneous electrical charge can kill or severely injure workers. According to the National Institute for Occupational Safety and Health, 5 to 10 arc flash incidents occur each day in the United States.

Belchoff noted these breakers had no visual indicators to show there was a problem. Although rarely operated, and never operated under load, their condition clearly posed an arc flash hazard.

He realized they had an urgent situation that needed immediate attention. He directed his staff to lock out the pumping plant, and new breakers were ordered to replace the faulty ones at the CRPP.

The failed breakers discovery triggered an effort to test all aging switch gear and breaker equipment in the Umatilla Project. A fourth breaker tested at another pumping plant failed as well.

Meanwhile, the Regional Safety Office notified employees using the Safety Alert System. A Yellow Alert was issued across the region explaining the incident and recommending a preventative maintenance program be in place for all projects using this equipment. The Alert reinforced an existing Arc Flash Policy enacted in 2013 that required project managers to conduct functional testing, measurement, replacement, or exercising the breakers open and shut.

"Getting the word out protected our people and equipment from damage, personal injury, or worse," said Regional Power Manager Joe Summers.

Electrician Tom Bradshaw at the Columbia River Pump Plant. (Photo by Kirsten Strough)

Arc Flash incidents are among the most common and deadliest of industrial accidents. An arc flash incident severely injured a worker at Grand Coulee Dam in 2013. This accident and a construction fatality that same winter prompted a region-wide safety awareness campaign to elevate safety consciousness and responsibility among employees and supervisors.

"Arc Flashes should be avoided at all costs," says Belchoff, "Let's minimize the risk wherever possible."

"Anyone starting a pump downstream of the breaker could have created a potentially deadly arc flash."

– Boris Belchoff, Umatilla Field Office manager

A Peak Experience Tower Safety

By Erika Lopez

Atop the Boise front's highest peak, at 7,582 feet, now stands Reclamation's Shafer Butte microwave transmitter tower. The 120-foot tower is the second tallest microwave structure in the Middle Snake area.

The tower is one link in the Snake River microwave backbone project—an innovative communications system that when completed will utilize upgraded microwave technology to remotely operate dams and power plants, and maintain security throughout Snake River Area Office. Reclamation owns and operates all of the sites, making them less vulnerable to cyber attacks.

Working on a tower at high altitudes can come with potential safety hazards. Dangers surrounding the job can include falling, electrocution, and weather conditions that can hinder access to the work site. Tower work is inherently risky and requires special training to complete the job without incident.

In May, the Black Canyon crews received hands-on training through the Tower Climber and Rescue Competent Person Course. The instructors taught tower safety and rescue techniques needed in the event employees get hurt on a tower and are unable to lower themselves to the ground alone. Employees donned appropriate Personal Protective Equipment and worked together in mock exercises for rescue and accident prevention.

"This five-day course builds knowledge and confidence by understanding how the safety equipment works through hands-on experience," said Gravitec Safety Instructor Kevin Denis whose company makes fall protection equipment. "It's like taking a driving course. You may pass the written test, but you really don't learn to drive until you get a few hours behind the wheel. In this training, they use their harnesses and all of the equipment necessary to navigate towers and rescue each other."

While working on communication towers may not be as risky as a Mount Everest ascent, safety precautions are taken seriously regardless of the tower's height.

"Having situational awareness is essential for every activity," said Brent Jensen, power plant maintenance supervisor at Black Canyon Dam.

Placing concrete for the Shafer Butte microwave transmitter tower. (Photo by Brent Jensen)

"Each day we are exposed to potential risks in our work environment, whether in the power plant, switchyard, on our dams or on a mountain top. It is imperative that each individual recognize potential hazards around him or her."

– Brent Jensen, Black Canyon Dam, Powerplant Supervisor

Group Photo: Gravitec Instructor Marco Wolf, Roland Springer, Kirk Murdock, Brent Jensen, Sam Plant, John Parker, Steve Kimball, Nick Covert, Rocky Smith, Dan Dunnam (Photo by Lanie Paquin)

Keeping Kids Safe with Otto Otter

By Annette Ross

In 1974, a dire community need existed in the Pacific Northwest (PN) Region. According to the Centers for Disease Control, drowning was the second leading cause of accidental death for all children up to age 14 in the region. Idaho had the second highest unintentional drowning rate in the nation for children from 1 to 5 years old.

In response, Reclamation formed the Columbia Basin Water Safety Council (Council) in central Washington. The Council partnered with the local American Red Cross, the Coast Guard Auxiliary, irrigation districts and, law enforcement to focus its efforts.

A year later, the Council chose a friendly, furry, water-bound creature as its safety mascot, after a talented fourth-grader drew the winning image during a state-wide poster contest. Otto Otter was his name. Later, the Council granted Reclamation permission to use the Otto Otter image for posters, a coloring book, and other materials in the PN Region. Several mascot suits were made and worn by area office staff and partners at public events.

Today, the Otto Otter Canal Safety Program teaches children and adults about how to be safe around canals, ditches, and other waterways. Otto piques interest and generates awareness, which is reinforced through classroom presentations. The "Otto Otter for Safe Water" educational coloring book was first published in the mid-1970s. In 2005, PN Region Illustrator Bobby Gaytan gave Otto Otter a face lift. Meanwhile, Public Affairs sharpened safety messages and combined the English and Spanish versions into one book. The PN Region's canal safety website features the book and several public service announcements at www.usbr.gov/pn/about/otto .

Canal safety events give Otto lots of face time with school kids. (Photo by Erika Lopez)

Each year, the PN Region purchases between 35,000 and 45,000 Otto Otter coloring books for all of Reclamation. The books are distributed to regional and area offices for use in elementary schools and at public events.

Recently the canal safety program expanded its message to pet owners with a "Leash Up, Stay Out, Stay Alive" campaign. At outreach events in the region, owners are advised to keep their pets away from canals because many people have drowned while trying to rescue their pets from swift-running canal waters.

For more than 40 years, thousands of children ages 5 to 10 have learned about canal safety through the Otto Otter Canal Safety Program. Its success is due to the efforts of many volunteers, irrigation district employees, and staff.

If you'd like to participate in the Canal Safety program or become an Otto Otter volunteer, contact Annette Ross, Youth Program Coordinator at aross@usbr.gov.

Situational Awareness: Practicing Safety

By Kayla Griffin

Situational awareness could save your life. It is critical, as a safety-conscious employee, to know what is going on around you at all times while doing your job. It only takes a split-second for you to get hurt or be fatally injured. The Department of Labor reported in 2014 there is an average of 13 work-related deaths every day. Being situationally aware means more than just paying attention.

There are many tools Reclamation offers employees to enhance safety and support employees' ability to practice situational awareness, ranging from satellite communication devices to Job Hazard Analysis.

Tracking Staff from High in the Sky

Being in a remote area without a way to communicate with managers, rescue crews, and other members out in the field may put you at risk. To address this hazard, the Snake River Area Office (SRAO) is using Satellite Emergency Notification Devices (SEND).

"This device sends out our location every 10 minutes," says Anthony Prisciandaro, a fish biologist in the Snake River Area Office. "The device can send and receive texts and is often the only way to communicate between crews in the field."

Prisciandaro says he has not only used SEND to track down missing equipment or keys, but he has even used it to help rescue members of the public.

"There was a couple whose engine overheated, and I was able to use the SEND device to get help to them," he said.

"Even when I am driving between here [Boise] and Lewiston, I turn it (SEND) on just in case—you never know what is going to happen," says Prisciandaro, "Not only does it benefit our crews but it makes people at home much more comfortable, knowing we are able to get help if needed and can check in."

Shortly after SRAO's adoption of the satellite device, a region-wide business practice was implemented.

Regional Business Practice No. 16-07 requires all employees working in rugged, dangerous, and/or isolated locations to carry and use a SEND as part of the minimum safety equipment to perform work. For more information, ask your manager how to check out a device and to develop a check-in/check-out procedure for your work group.

Critical Thinking Before the Job Begins

JHAs enable employees to critically think about each potential hazard they could face in any work situation. This analysis forces employees to practice situational awareness, which can reduce the chances of a work-related accident.

"A lot of my work requires me to walk near water or electricity, and exposes me to different weather conditions and confined spaces. I also can run up against rattle snakes or other poisonous creatures in the area," says Umatilla Field Office Engineering Tech and GIS Specialist, Tom Appler. "Because of this, I always start my inspections with a JHA."

Built-in Readiness with PPE

Doug Bennett, a geologist at the PN Regional Office, practices preventive action/situational awareness each time he goes out into the field. Bennett often climbs rugged terrain at dam sites or works near noisy drill rigs collecting core samples where loose rock and materials abound. In each scenario, Bennett outfits himself with personal protective equipment (PPE) and pays attention to everything around him.

"When I inspect construction foundations I avoid construction equipment," says Bennett. "I wear my PPE and a bright orange vest so I can be seen. At drill sites, I watch for debris-fall from the drill and any equipment failure. With landslides, it is about keeping your eyes open and knowing what's safe to walk on."

Situational awareness tools like these are available through your manager or safety office. The Regional Safety Office says they work best when combined. Use of JHAs, PPE and SEND devices translates to preventive safety for all employees. They bring presence of mind and keep employees alert to possible injuries .

Remember, situational awareness is more than paying attention, it starts with a clear mental picture of the potential safety hazards you may encounter and all the actions you make take in response to a hazard.

SEND devices generate locations signals every 10 minutes. (Photos by Kirsten Strough)

"Even when I am driving between here [Boise] and Lewiston I turn it on just in case—you never know what is going to happen"

– Anthony Prisciandaro, Snake River Area Office fish biologist

Traffic Plan Serves and Protects Drillers and the Public

By Dave Walsh

Among the most critical tools to evaluate a dam's strength is through geologic drilling. Soil samples collected by geologists and drill crews can tell everything about a dam – how it's composed, where leaks may occur and, what pressure the materials are under.

At Scoggins Dam 40 miles west of Portland, Oregon, drill crews and geologists spent over seven months last summer drilling several holes into the dam. Once a drill is set, the rig must remain in place over the hole to maintain proper alignment potentially for several weeks.

How then could local traffic keep flowing around the area's most popular swimming hole, Hagg Lake, while drill crews and geologists work atop the dam for most of the summer?

Regional Geologist Jared Vauk had an answer: a traffic plan.

"We considered closing the dam entirely, but we found a way to give locals access and meet our safety needs," he said. Vauk worked with the Boise Design branch, and Washington County Traffic Engineer Sarah Owens to develop the plan.

"The biggest challenge when establishing temporary traffic control zones is finding a balance among the workers' safety, the drivers' access and the emergency services' requirements," she said.

Options ranged from automated traffic lights to hiring traffic controllers. Finally, signage, barriers, and cones were used, to route local traffic in a counter-clockwise direction around the lake. The plan left one lane open over the dam. Though accepted initially, there were "bumps" in the road.

First, Washington County emergency responders objected that the route would add 15–20 minutes for emergency traffic on the lake's south side. The route was changed to a clockwise direction around the lake, shortening travel time and still leaving one lane open.

Next, some locals chose not to cooperate. Traffic Engineer Owens cited public cooperation as essential for traffic plans, but often they're the most unpredictable.

"Getting drivers to understand the importance of driving 10 miles out of their way was challenging when they think they can make a dash for it, albeit the wrong direction, over the dam," she said.

"We always felt safe, but we sometimes had to redirect traffic ourselves" said Geologist Todd Maguire. He added that most of the public was cooperative. In the end, motorists safely accessed Henry Hagg Lake for most of the summer, while drillers completed their work right on schedule in mid-August.

PN drillers kept traffic flowing to one lane at Hagg Lake for most of the summer. (Photo by Todd MaGuire)

Ready When the Big One Strikes: Cascadia Rising

By Suzanne Marinelli

On March 11, 2011, the world watched in horror as a magnitude 9.0 earthquake and resulting tsunami struck the coast of Japan. Imagine what damage a magnitude 9.0, five-minute-long earthquake would do to the Pacific Northwest (PN). Now think how Reclamation's 29 dams in Oregon and Washington would be affected. Millions would be without power; clean water and emergency responders would be struggling to keep up.

Last June PN employees, from four Reclamation offices got crucial experience during a multiagency catastrophic disaster scenario called ***Cascadia Rising***. The three-day exercise was run by the Federal Emergency Management Agency and fired up the collective emergency responses of dozens of Federal, State, Tribal and local government agencies.

"We have never gone through an exercise of this scope before," says Jim Dean, Reclamation's Regional Facility Operation & Maintenance Manager. "While we have our regularly scheduled Emergency Action Plan (EAP) scenarios at facilities, this exercise did more to mimic a real-life situation."

Over three days, 11 dams were given facility-specific emergency scenarios, enabling Reclamation to weave 'what-if-the-dam-fails' into the conversation of five county Emergency Operation Centers who were already exercising search and rescue, mass care and multiple infrastructure failures.

For Reclamation, the exercise validated the EAPs and strengthened our relationships with our local agencies. Examining communication between field offices and irrigation districts is a typical exercise objective, but Cascadia honed in on the possible issues between the field and regional office during a mass region-scale event.

"Preparing for an event with the magnitude and impact of a Cascadia earthquake gave us a real-world scenario that helped the field office test our relationships and emergency action plans," Dawn Wiedmeier, Columbia-Cascades Area Office manager.

By the third day of exercise play, a Regional Emergency Coordination Center (RECC) was activated in Boise to orchestrate responses between Field and Region. RECC members kept in touch through phone banks, laptops, and dozens of EAP manuals and related documentation.

During the After Action conferences, many exercise participants agreed that attention on regional- and field-level incident response should be a firm direction for the emergency management program.

At the Regional Emergency Coordination Center Jim Dean, Mary Mellama, Russell Chatterton, Suzanne Marinelli consider over scenario options. (Photo by Dave Walsh)

Overall, ***Cascadia*** served to remind local agencies that dams in their areas cannot be taken for granted. For Reclamation the exercise demonstrated how much we are part of the big picture in the Pacific Northwest.

"We have never gone through an exercise of this scope before..."

– Jim Dean, Regional Facility Operation & Maintenance manager

Driller Rick Knott (on right) and Kevin Colby securing a deep mine shaft near Keyhole Canyon, Clark County, Nevada (Photo by A.J. Mitchell)

PN Drill Crew Saves Lives —One Mine at a Time

By Kayla Griffin

It's not often drillers get an opportunity to save lives, but the Pacific Northwest Region Drill Crew is actively engaged to make public lands safer, preserve habitat for endangered species, and strengthen federal partnerships.

In the West, there is an estimated half-million abandoned mine sites with the lion's share in Nevada. Many public land users may not be aware of the unique threat these mines pose. For example, some collapsed mine shafts have been known to swallow SUV-sized vehicles. The Bureau of Land Management (BLM) reports that dozens of people die annually from accidents related to abandoned mines, and the hazards are as numerous and unique as the sites themselves.

Under a BLM-coordinated, multiagency effort, the Boise-based Drill Crew provides the "boots on the ground" to secure abandoned mines in Nevada. They've closed more than 650 mines since 2007.

"This project is about public safety," says Kevin Herrmann, Drill Crew foreman. "Most people are unaware of the dangers associated with abandoned mines."

Herrmann says the work can be physically demanding and is not for everyone. To reach sites atop mountains and through rugged terrain, PN drillers haul 50-pound backpacks loaded with supplies. They also use a combination of helicopters, bulldozers, and ATVs to access or take materials to the site. Expanding foam or bat gate closures seal the old mines to prevent human trespassing, while being careful to leave clear access for animals that use the shafts for habitat.

> **"Most people are unaware of the dangers associated with abandoned mines."**
>
> **– Kevin Herrmann, Drill Crew foreman**

"We never go inside the mines when we work on them because of safety hazards," said Herrmann. "We haven't had any near misses (in regards to safety) for years, so I think we are doing a pretty good job." Drillers have to be cautious of the many hazards around mines while sealing them, such as falling rocks, killer bees, and holes that can appear under bulldozers.

"The results have been amazing," said Chris Ross, abandoned mine program leader for the Nevada BLM. "They're given two weeks of training before turning them [PN Drill-Crew] loose independently on the various project sites."

Public land users can look forward to a far safer landscape where wildlife is protected and encouraged, mines are secured, and all are free to enjoy it safely.

It's Safety First at Yakima Fish Screen Shop

By Dennis Hostetter

For the Yakima Field Office (YFO), fall signals the start of fish screen maintenance – a time to clean, repair or rebuild any one of 84 fish screen sites the YFO oversees. The screens prevent fish from being flushed into irrigation canals. Fish screen maintenance makes up much of the crew members' workload this time of year, and married to that task is "safety."

"Most people don't know what a fish screen is," says Dale Danielson, YFO collateral duty safety officer. "They're everywhere in the Yakima Basin."

There are many potential hazards YFO crewmembers look out for when working at a fish screen site. Walking surfaces can be slick due to water build-up, which then turns to ice during the winter. The structures are primarily concrete and steel. The screens are bulky, weighing up to 11 tons, and require cranes to remove them.

Levi Powell works at Roza Dam on the Yakima River during the fish screens maintenance season. He and other crew members remove silt and other debris that builds up on the screens. He emphasizes that there's no room for carelessness when working around large and heavy structures.

"It's important for workers to keep their fingers, hands, and all body parts clear of any objects that can fall or slam shut on them," says Powell.

He said good communication among workers is vital so everyone knows where their co-workers are before starting up any mechanical components.

On all jobs personal protective equipment such as steel-toed boots, hard hats, hearing protection, safety glasses and fluorescent vests are standard. Every crew person must be aware of the job's Standard Operating Procedures and requirements found in the Job Hazard Analysis.

Maintenance at Roza Fish Screens. (Photo by Dave Walsh)

Other potential hazards include working on or around gantry cranes that hoist screens from the larger facilities like Roza. Safety harnesses are required. Without them, a crewmember could suffer a serious injury or death from a fall, landing in the open bays below. Workers also must be aware of the possibility of being electrocuted from faulty grounds or loose wiring.

"Safety practices are much better today than they were 20 years ago because there's no longer this 'rush-rush' mentality where the job has to be done right now," says Connie Morgan, YFO facilities maintenance coordinator. "Today, any crewmember can stop the job immediately if they feel they're in danger of injury."

A Routine Pick Becomes a Pickle

By Erika Lopez

The size and scale of equipment at Grand Coulee Dam make cranes a critical tool in a power plant. They move big things short distances, but this time, the crane "pick"—crane operator lingo for moving an object—was cut short.

In July 2016, a breaker failure on the Bridge Crane No. 1 created a near-miss incident that left a 535-ton runner suspended about 30 feet as it was hoisted out of Generators 23 (G-23). Turbine runners are giant water wheels that provide the rotating force to spin a rotor and produce electricity inside a hydroelectric generator.

Andritz, the contractor performing Third Power Plant mechanical overhauls, had paired cranes 1 and 2 to pick the giant runner from G-23, lifting it vertically more than 80 feet and carrying it 600 feet to the power plant's south end.

"This activity didn't go as planned, but Grand Coulee crews relied on their training and experience to resolve the issue," said Third Power Plant Facility Manager Dan Booker.

After testing verified they had a failed breaker, they determined a replacement part was not in stock.

The electrician crew removed the main breaker from Bridge Crane No. 4 and installed it within Bridge Crane No. 1, Booker explained.

By replacing the Bridge Crane No. 1 main breaker with the main breaker from Bridge Crane No. 4, the crews were able to restore power to Crane 1. Now, the runner could be returned to its parking ledge safely within the G-23 draft tube—all performed without incident.

"In this instance, smart and appropriate decisions were paramount to minimizing the risk to plant personnel and equipment," said Power Manager Coleman Smith. "I believe our various safety trainings and the region's emphasis that safety matters is why the crews handled this situation so well."

Following replacement of the main breaker on Bridge Crane No. 1, G-23's runner was successfully moved to the south end of the third power plant for repairs. Crane 1 has a permanent replacement breaker now, and there was no damage to equipment in the process. Smith says this incident is a success because no one was injured during this unexpected workday experience.


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“This activity didn’t go as planned, but Grand Coulee crews relied on their training and experience to resolve the issue.”

– Dan Booker, Third Power Plant Facility Manager

To test the crane's capacity safely, huge water bags were rigged to the 25-ton auxiliary arm. (Photo by Tim Mayhak)

The Weight of Safety at Hungry Horse Dam

By Timothy Mayhak

Safety has been heightened at Hungry Horse Dam by the addition of the first, certified personnel-lift at the facility in over a decade. The personnel-lift is hoisted by a 25-ton auxiliary arm that extends from the 125–ton capacity gantry crane atop the dam. It's relied on for getting key crafts people into position to conduct maintenance and make repairs.

"It has all of the safety devices. It's just safer to get in and get out, and it's certified," says Mark Hemmingway, the Hungry Horse plant mechanic and lift supervisor. "When repairs are needed, like maintenance on the selective withdrawal relief gates or wheel gate chain, we are now properly equipped to get the job done safely."

"We follow one golden rule: never get under the load."
– Mark Hemmingway, Hungry Horse plant mechanic

Before the personnel-lift could be put into operation, the gantry crane's 25-ton auxiliary hoist had to be load tested and re-certified. Gantry cranes are commonplace at Reclamation facilities. These cranes are used to lift and move critical, heavy, and expensive equipment, as well as personnel. Preparations began a year in advance when professional crane testers arrived at Hungry Horse Dam with water bags, pumps, hoses, valves, and heavy duty scales. Project plans and JHAs were finalized with crews, emphasizing safety practices like situational awareness.

"We follow one golden rule: never get under the load," says Hemmingway.

With all risks assessed and personnel safely in place, huge water bags and scales were rigged to the crane. Hoses pumped water into the bags to ensure the crane could bear the required weight. Once the gantry crane was operational, Hemmingway prepared for the critical lift involving personnel.

Using a specific checklist guided by Reclamation Directives and Standards and the Reclamation Safety and Health Standards, Hemmingway further inspected and tested the personnel-lift before it could be deployed for use and to ensure safe completion of the essential work.

"When the day came around to finally use the personnel-lift, it seemed anticlimactic, routine even," said Hemmingway.

The planning, testing of rigging, JHA, and briefings addressed every aspect of this event so thoroughly that replacement of the fixed-wheel gate indicator chain was easy, and the selective withdrawal relief gates were replaced and repaired with time to spare. Hungry Horse has an exceptional safety record for critical personnel-lifts. The facility remains 100 percent operational in support of Reclamation's mission to deliver water because of its most valuable resource—people.

Safety Word Search

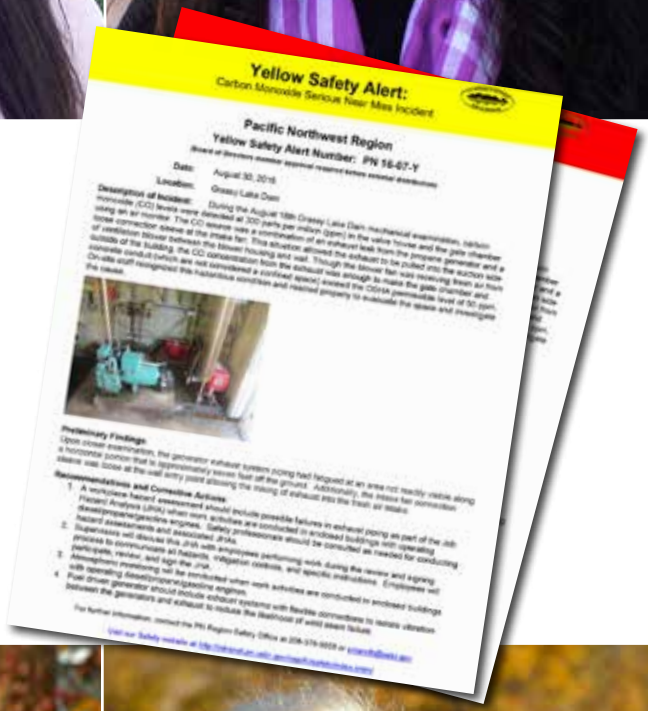
T S G K X D A I I R V S E E L C C P T Q
U N O T A G J Y E Q U N R C R C O C N K
P Z E N G P P C F R I O A I I U M T R R
X R G M J D O I R R N I W T V F M J L H
R E O I N G E O C T K T A C G E U F C A
R E B T N O U F J C S A M A N S N I E Z
D X S I E N R X E G K L X R H U I X G A
Y T Z P D C E I N N N U F P E D C A V R
Y E Z I O Y T I V O S G J A B A A E J D
Z R N Z V N N I I N J E K P N Y T Y P S
F G U C D R S T O Y E R Y B X O I G R W
S Q H J A T N I K N H T L A E H O F O N
K T Q W N E A L B S Y W D I A Y N D C Z
R P N U V I S N O I T C U R T S N I E K
U N D E R S T A N D L J U L U K G K D G
F M R I D R V O I E V I T C E F F E U Z
I P U S E I B W K M F I T F O C U S R P
R R E L Q Y C S E M P L O Y E E Q T E J
P Y A A E T Z C Q E C B Q E R X I M S R
F P D K C B Y U A V N Y Z B U E E D V O

ACCIDENTS
ALERT
AWARE
COMMUNICATION
DANGER
DEFENSE
EFFECTIVE
EMPLOYEE
ENVIRONMENT
FOCUS
HAZARDS
HEALTH
INJURY
INSTRUCTIONS
PRACTICE
PREVENTION
PROCEDURES
PROTECTION
RECOGNIZE
REGULATIONS
RESPONSIBILITY
SURROUNDINGS
UNDERSTAND
WARNINGS

Send completed word search puzzle, with your name at the top,
to the Regional Public Affairs Office (PN1200)

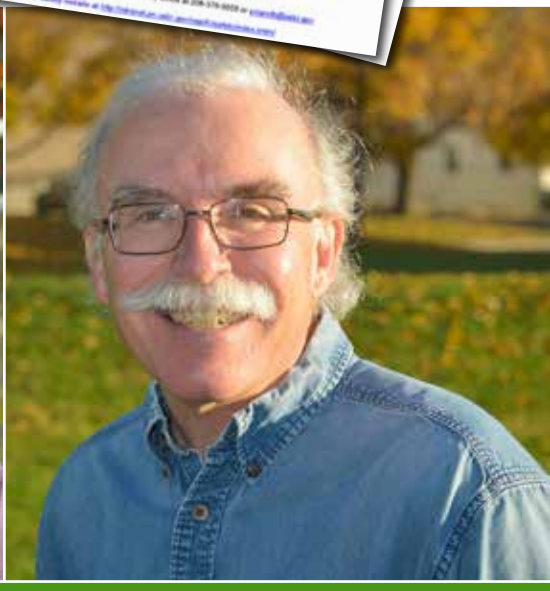
Pacific Northwest Region Core Values: *Amazing People Accomplishing Important Work*

Clear & Effective Communication



"The Safety Alert Working Group incorporated employee feedback and designed a great tool for spreading the word about safety mishaps in our region. I believe it has become the standard in Reclamation for disseminating safety information and will help keep our employees safe and informed."

– Marc McFarland
Safety & Occupational Health Specialist



Top Row: Shawn Smith - Safety & Occupational Health Manager, Bonnie Christensen - Industrial Hygienist, Julie Weymouth - Safety & Occupational Health Specialist
Bottom Row: Ricky Hlawek - Equipment and Maintenance Supervisor, Marc McFarland - Safety & Occupational Health Specialist, Duncan Nims - Regional Learning Officer